On the Remitting Fever of Philadelphia County.

Passed March 16th. 1825

To
The Medical Professors
in the
University of Pennsylvania

Your unremitted exertions for the moral & intellectual progress of your pupils — your deep felt interest in their welfare, are too well known & acknowledged, to be iterated by me.

But for tokens of friendship & kindness, received from most of you as men & preceptors, I especially stand indebted — and were I to omit this opportunity of expressing sentiments of my esteem & regard, I would be guilty of ingratitude. This is not the cold language of ceremony, but the candid effusion of my heart.

Of the subject matter of this Essay, I will only observe, that it was not written with the view

of imparting information, but complying with the laws of the Institution.

Of its errors & imperfections I am fully aware. But to men who have ascended the cliffs to science & eminence, apologies from youth & experience are useless. If I have contributed in the least, to divest this disease of one of its terrors — or if I am deemed competent to be enrolled among the members of that profession which it is my earnest wish to cultivate, I have reached the acme of my desires. —

I am respectfully yours &c

Isaac N. Mamelis.

Of the Remitting Fever, as it prevailed in the Vicinity of Philadelphia in the Summer and Autumn of 1824. — By S. N. Marsden.

After the decline of Small Pox, which had prevailed to some extent, our Inhabitants were generally healthy. The measles now made their appearance; they were for the most part curable, yet sometimes proved very obstinate & even fatal. The danger was chiefly dependant on pulmonic inflammation, with which the disease was more or less attended. One or two cases terminated mortally, before the eruption was visible: this issue was apparently owing to the injury the brain & other organs sustained from the engorgement that occurred in the commencement of the attack. The constitution of the air was at this time, very favorable to exanthematous affections. Scarlatina & eruptions of an anomalous nature, were frequently met with:

the latter were often mistaken for Varola.

Intermitting fevers now predominated over all other diseases, & maintained their sway for several months. The measles which still existed assumed their type; instead of continuing until the eruption appeared, the forming-fever would sometimes undergo a remission, & in several instances, was completely carried off by perspiration, on the third day, a cold stage was formed, & the rubeolous efflorescence came out during the ensuing fever. This to me appeared extraordinary, as I always supposed, that fevers which arise from contagion were progressive, without suffering any remarkable intermission, until their specific effect was produced. It is however to be ascribed to some secret influence of the then reigning Epidemic. The Ague in its attacks, made very little discrimination. All ages, sexes, & conditions were liable to it. Many, who had suffered much from it, the preceding year, were again afflicted with it. In this respect however, it

was not singular; as persons previously exempt, now yielded to its power. Pregnant women were very prone to it. as well as individuals exceedingly temperate, or much enervated by dissipation: these extremes uniting in this respect. Its type was in general that of Tertians and Quotidians. Quartans and other varieties were very rare. In the character of the symptoms there was nothing remarkable, these corresponded with the descriptions given by systematic authors. The cure was conducted upon the commonly received principles. Very little was attempted during the paroxysm, always adopting the apyrexia, for the administration of the remedies. When a sufficient quantity of good bark could be taken, I never knew a simple case, to resist its efficacy. But prejudices & inability to retain it, often induced the medical attendant, to resort to other medicines. Sulphat of Quinine ever since its introduction to the public, has been held in great repute, & nothing has

hitherto seemed to diminish our confidence in its remedial virtues. Its operation is the same, as that of bark, & in its effects no better: but is to be preferred on account of its being a neat preparation, & the facility we possess, in giving it in different doses & forms to suit the exigencies or fancies of the sick. I must be excused, when contrary to the opinion of Professor Chapman, I think that Quinine possesses no power superior to bark, in preventing relapses: the subsequent attacks after either remedy, being very common. The most that can be done to secure the system, is to take more of the remedy, than is just necessary to extinguish the disease pro tempore, and also to counteract the predisposing diathesis of the patients constitution, by suitable clothing, diet & habits.

In the month of July, there were many cases of cholera-morbus-infantum, Bilious-colic & Dysentery, coexistent with the intermitting fever: sometimes alternating, but more frequently associated with it.

By comparing the Bills of Mortality of the City, with the deaths that occur in the adjacent districts, it is manifest, that their diseases are the same, increasing & declining in the same ratio. The Small pox, Intermitting & Typhus fevers however, are exceptions, the former, after raging to an alarming degree in the city, where it originated, gradually approached the suburbs, & decreasing as its bounds were extended, finally became extinct. On the other hand, the fever & ague, which a few years since, was unheard of in those parts, rapidly spread misery & affliction among the population of the Country, & it is only within the last year that the City has been invaded by it. Typhus fever, which exists every winter in some parts of the city, is hardly seen by the country practitioner in its primitive form: when it does occur, it is generally the sequel of other fevers.

I have dilated, perhaps too much on other diseases, but my remarks must not be considered as

altogether irrelative or foreign to my subject. The history of Intermittents is especially interwoven, with the Epidemic Remitting fevers of this climate. Offspring from the same parent cause, they should not be separated farther than to insure their proper treatment. —

The above state of things continued without much interruption, until about the middle of July: when the first case of Continued fever fell under my notice. This term is used synonimously with Remitting fever. It was one of the most obvious features of this fever, to remit occasionally during its course, especially if it was protracted. By some it is styled Bilious, but this being an accidental & frequently a deficient symptom, I have omitted it. —

The patient was first affected with languor & listlessness, with a disinclination to pursue his ordinary avocation; pain in the head, back & extremities; rigors, chills or crawling sensations in the course of the

spine; skin hard & contracted, without any moisture: veins on the surface very empty, & of a dark colour; countenance dejected, & void of animation: appetite lost, nausea, & vomiting, thirst great, & a dark livid tongue: the pulse small & indistinct. This train more or less complete, would sometimes continue two or three days, but in general it was shortly followed by a stage of reaction. This was characterized by great anxiety: jactitation of the body & limbs; indescribable sickness: irascibility of temper: hot & dry skin, turgid & suffused countenance; a cessation of all secretions, & an augmentation of pain. In some, the mind was immediately disordered; commonly however, the cerebral symptoms did not appear so early. The respiration was anxious & laborious, occasionly attended with pain in the chest: the pulse fuller & more resisting to the finger: the thirst the same, or less urgent, tongue red & covered with a white pellicle, with numerous red points or dots appearing through it. Sometimes

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bleeding from the nostrils would happen at this time, these discharges were not critical, but belonging to the disease.—

These symptoms, with many others that will afterwards be mentioned, constituted the fever. They generally came on in the forenoon, & became much aggravated during the day. At night, the unhappy sufferer enjoyed no repose, perhaps at the approach of morn, he would lapse into a slumber, to be disturbed with startings & horrible dreams: often talking loud & always engaged in difficulties. At this time, were rarely seen indications of perspiration. The more evidently this disposition was manifested, the more favourable was the event. Together with the appearance of sweating, a moist tongue, no thirst & relaxed skin were observable. Upon inquiry, the patient pronounced himself better & easier. But ere long, the sufferings of yesterday were repeated, & if possible aggravated.

If its course is not arrested by art, these symptoms maintain their activity for a time, & then gradually decline. This generally happens between the fourteenth & twenty first days, but frequently still later.— The stage of the disease, that is now formed, is one of exhaustion — Its presence is denoted by a universal subsidence of the actions. The pulse is quick, soft & small, partial sweat, reduced temperature, sunk countenance, subsultus tendinum, picking at the bed-clothes: tongue may be clean, but commonly is very foul & trembles when protruded from the mouth: the fecal discharges black & offensive are voided involuntarily: low delirium: coma. hiccup & a general prostration of strength. When any of these signs are present, the patient is in jeopardy, & if all or a majority are attendant, all hopes of recovery are negatory. Death soon ends the scene, to the lamentations of his friends, the regret & humility of his physician.

There is very little danger of confounding this, with any other than typhus or intermitting fever, From the former it may be known, by the season of the year, & also by the greater diminution of the mental & bodily vigour in typhus. — In the practice it is necessary to perceive, preserve & respect these divisions, tho' I believe these diseased actions to vary only degree: the same morbid impression, under the stimulating property of heat, exhibits its violence in the form of active arterial excitement, while under the influence of an impure air & the sedative quality of protracted cold, developes itself in general depression & local congestion.

From intermittents it is more difficult to be distinguished. The obscurity however, only obtains during the forming state of the diseases. For as soon as a fever is followed by a general perspiration, & a consequent reduction of the febrile phenomena, all doubts are dissipated. But before the accession of this diagnostic symptom, the matter is not so easy. From

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the mere abstract consideration of any idiopathic fever, it is in my opinion, impossible to pronounce as to its type. It is by attending to the season of the year, the character of the prevalent Epidemic; the circumstances of the exposure, & the patients constitution, that we are enabled to predict its type. In a practical point of view, it is of immense importance, to draw the line of separation. To pursue the same treatment in both, would lead to opposite results. During the three stages of intermitting fever, our medicines are of little value, the most we attempt, is to allay violence, availing ourselves of the Intermission, to effect the cure, sometimes the excitement runs very high, apparently to require copious depletion, yet if it be much practiced, very little advantage is gained; on the contrary the paroxysm will be protracted, the regular & salutary designs of nature are frustrated, & the system becomes debilitated & predisposed to subsequent seizures.

whereas in this fever, depletion is indispensable in the beginning— After twenty four hours, the distinction is obvious, instead of terminating in a sweat, or other critical discharge, the remitting merely abates in violence, & an exacerbation takes place, before the fit is finished. Sweating is the best test of Intermittents, for in these it always occurs, & in Remittents never in a full degree, until it is subdued by remedies, or at the decline, when the stage of collapse has arrived.—

Of the Post-Mortem appearances, I have nothing to advance, never having had an opportunity to examine the dead body. Unquestionably marks of congestion & inflammation, in different viscera would be revealed. In this respect, the brain stomach & liver would occupy a preeminence in adults, & the bowels in children, as these organs seemingly suffered the most.—

The Remote-causes that have been enumerated are many. The first & most instrumental are the physical changes of the atmosphere — as it is dense, rare, dry, moist, cold, hot &c &c or as these qualities succeed each other, or are differently combined. An infinity of states in the air may be occasioned by different modifications of the above properties, & each combination may have the effect of exciting this fever. — A great deal still remains to be explained in this department philosophy. The absence or presence of electricity has been suggested as sharing in the production of disease, with how much propriety I am unable to decide. The passions of the mind; intemperance in eating or drinking: fatigue &c These have been cited as noxious agents & under certain restrictions as time & mode of application, are capable of eliciting this febrile disease. Of this there can be no doubt; they all come under the cognizance of the senses, & their operation in the production

of disorder, can perhaps be explained. But as to another cause, that is commonly mentioned, it is not so intelligible. I allude to the miasmata of marshes, so celebrated in the books of medicine: concerning these our knowledge is very limited, being invisible matters they have never been subject to our understanding, neither most accurate eudiometry, or the strictest chemical analysis has ever detected them. We are told, they are exaled by a burning sun from marshes, or low humid situations — that they are certain subtile matters floating in the atmosphere, & subject to its laws, capable of being wafted by the winds to some distance from their source — & when introduced into the human body, have the power of disturbing its regular motions, & establishing disease.

Of this however there is no proof, & in my humble opinion, consists only in speculation & obedience to usage. In the original sketch of this essay, I delivered my reasons for this belief more at length,

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but the want of room, has obliged me to abridge them. It is agreed by all, that these effluvia are produced by a hot sun, acting upon a wet soil. But it is well known, that this & intermitting fever may & do occur at ~~the~~ seasons of the year, & in particular situations, where this conjuncture does not take place.

The forming & secondary fevers of specific diseases, frequently imitate intermitting & remitting fevers in their forms, here marsh miasmata can not be suspected.

The contagion of small pox & other deseases, always produces a desease sui generis; but these morbid agents, instead of observing these laws, are represented as clothed with the power of engendering fevers. Dysentery, colic & many others ad libitum.

A protracted rain, succeeded by an intense heat, are supposed a crisis most favourable to their production & dispemination. Instead however, of fevers arising more frequently at this period, &

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have observed the contrary, particularly as it respects agues, the weather most conducive & congenial to them, being a cold, cloudy or rainy day.

Lastly, granting an existence to these pernicious particles, the greatest discordance prevails among the medical Profession, not only as to the modus, but also to the locus operandi. This controversy has enlisted abilities of the first degree & still remains unsettled. Some, believing in active cutaneous absorption, assert that the skin is the medium of entrance. Others denying this function of the cutis, contend with equal pertinacity, that the lungs are the portals of morbific matter to the receptes of the system. Among this number is the great Bichat.

Another class of pathologists of deserved authority, maintain among other reasons, that as the lungs are organs of excretion, other avenues must be sought for. These believe, that the stomach is the receptacle of the poison, & as they are disciples of the doctrine of absorb-

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-tion or sympathy, say it is received into the circula-
-tion, or the morbid impressions emanate from the
stomach, to other organs, as radii from a centre.
This is the oldest opinion, & obtains most at the
present day. An Author of 16th Century remarks
"so that the mineral of a fever, whether inter-
-mittent or continued, yea even of all or most diseases,
is radically in the stomach, after whose pipe, all the
rest of the ferments of other parts dance, & are really sub-
-ject to the beck & influence thereof. —— in truth all
fevers are but secondary in the blood & humours, but
primary in the stomach."

Of the comparative merits of these theories I am
not prepared to speak; they are merely adduced,
to represent the difficulty of admitting marsh miasmata,
as general sources of fever. These considerations
conspire to render their existence improbable, & in-
-duce me to believe they are but other names for
our ignorance. So far as my own observations extend

I have no other evidence of these malaria than Books. There is perhaps no one topic, in the whole circle of medical science, concerning which there is less discrepancy of opinion. But it is not on this account, the less open to suspicion. The human mind is prone to arrive at ultimate conclusions, & rather than fluctuate in uncertainty, will cling to error. Marsh effluvia evidently had their origin in the proud days of the humoral pathology, & have been retained long after their kindred delusions have been exploded from ~~[illegible]~~ the records of medicine.

The proximate cause of fever, has long presented an arena for medical gladiators: yet none have borne away the prize, & few have been rewarded for their labours. Of all men engaged in this controversy, none have supplied talents more splendid or diligence more unwearied, than Dr Cullen. His practice, which he recommended

with diffidence & hesitation, is now the most useful part of his writings. Of this he might have exulted with the Roman Poet "Exegi monumentum perennius aere". But his theories, which he considered his master work, are viewed as visionary & scarcely a page is believed. Could we trace the pernicious progress of diseases, from their commencement in irritation, to their termination in health or dissolution, we would possess a true pathology, the proper indications would readily occur, & the appropriate remedies at once employed. But these are mysterious operations, that human knowledge can not fathom. Nature has drawn over them the mantle of obscurity, & can only be inferred from their laws, phenomena & effects. If these are the difficulties that encompass this subject, it ill becomes one that is yet at the threshold of the Profession, to enter its grounds. But the necessity of pursuing this part of the subject, will be apparent, when we reflect, that our indications of cure are always

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predicated upon our pathological notions, & as these approach the truth, will our remedies be successful.

From a review of the remote causes, it appears they are all agents that may be applied universally to the body, & operate on the nerves, it is manifestly upon this system, that they primarily act or impinge: for without nerves no tissue is alive to stimuli, or susceptible of action. This consideration supersedes the necessity of seeking for a local origin of idiopathic fever, & implies that it may be a general affection of the system. The effect of the morbid impression, is that of depressing the vital actions, or infringing upon their regularity. This is evident from the forming symptoms of fever. The heart being impaired, the circulation of the blood is languidly performed; the animal heat (whether it be a chemical phenomenon, an animal secretion or in my opinion a vital property common to all living bodies,) is diminished: caloric the natural stimulus of the vessels, being abstracted,

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the capillaries are consecutively inactive; the blood recoils from the superficies, & retires to the heart, brain, spleen, liver, muscles, & under the great fascia. To this & attribute the pain so commonly felt in the limbs & loins, parts that are very tendinous especially the ladies.*

This condition of these parts is aptly called engagement or congestion. Sometimes it continues for a long time, when this happens, the strength, which before was merely pressed down by the shock, is now actually weakened. The remote cause may be so powerful as to overwhelm the patient at once. This is also mentioned by Sydenham of the plague and by Rush of the yellow fever. The former states, that "the plague is sometimes not preceeded by any perceptible fever & proves suddenly mortal." — This event is not common, being soon overcome by the recruiting faculties of the system. In the cold or engaged stage, the heart & large arteries are by their contents, & accumulated

* The pain is most severe, during the cold stage.

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nervous energy, simultaneously stimulated. The blood now resumes its wonted channels, & the lost equilibrium of the circulatory system is restored. This train of action constitutes the stage of excitement. It is nature's mode of overcoming noxious impressions & has for its end their expulsion, or lessening the action by an increased discharge of some secretion. It is very analogous to the effects that follow external injuries.

But instead of the excitement being relieved by the inordinate action of some secretory organ, other unhappy circumstances conspire to protract & aggravate the disease. Every symptom acquires new force, especially the pain, heat & restlessness. At first perhaps the affection consisted principally in a general excitement, without any organic disorder. The system however being surcharged with fever, the vehemence falls upon some particular part, which now attracts the attention more exclusively. The seat of this topical affection, whether congestive or inflammatory, is governed

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The season of the year, has a vast influence in modelling the form & determining the seat of this disease. According as the temperature is high or low, are the abdominal or thoracic viscera involved. There is a great connexion between the diseases of particular parts & particular states of the air. The sympathy that prevails between the skin & lining membrane of the lungs, is acknowledged to be intimate, but not more close, than it is between the skin & chylopoietic viscera. Why diseased impressions upon the surface in high temperature should rather be directed to the latter, than the former, I do not understand. But that the organs of the chest, should be very commonly affected in cold weather, is not surprising. The exciting cause comes directly in contact with these parts: the volumes of cold air that are constantly passing & repassing, paralyze the capillaries of the mucous membrane, the circulation of this tissue becomes torpid, & when

the stimulus of heat is subsequently applied, these same debilitated vessels, are preternaturally excited, hence irritation & inflammation.

The passions having their seat in the head, must unequally when creative of this disease, subject the brain and organs of the senses, to much of its violence. Accordingly in such cases, cerebral symptoms are the most urgent, as great pain, delirium, vigilance, depraved vision, &c. This state frequently terminates in effusion, when the appearances are precisely those of Apoplexy. It has also ended in incurable mania.

In adults the brain, liver & stomach are almostly uniformly affected. But children, whose organs being yet nicely adjusted, not enervated by the follies or pursuits of riper years, experience very little disorder of those parts. In them the desease consists mostly in a general disturbance of the vascular system. When any organ is invaded, it is generally the bowels.

Females who are delicate & of the nervous temperament, have combined with the common, symptoms purely sexual, as suppressed menses, oppression at the precordia, "risings in the throat" as they are usually expressed.

Many more concomitant topical affections might be adduced, but there will be sufficient, to confine our case to the primary & principal disorder, & not be diverted from our purpose, by the presence of accidental & many times insignificant symptoms. That specious maxim, which inculcates the treatment for symptoms only, is not to be trusted to its full extent. The name of the disease is often of great use in the practice, especially if it is expressive of some important feature ~~is~~ as in the disease before us. Besides the obvious causes, that direct this disease, to particular parts, there are many that elude inquiry. Some latent predisposition, lurking in a particular part, invites the disease to the part. During the stage of depression, it happens that the part most in fault, is most

engorged in proportion to the debility & the congestion. If this condition remains, for instance in the brain, the greatest injury is inflicted upon this tender & excitable viscus. Speedily however the vessels endeavour to relieve themselves, by taking upon themselves inordinate action,— This constitutes the inflammation, many times so difficult to subdue & when not overcome, is the cause of death. It seems to be induced by the irritation of the engorgement, & is not to be viewed as the seat or "throne" of the disease, were this the fact, the inflammation would invariably select the same organ.

When the reaction is established, the heart & arteries are preternaturally excited, & a greater current of blood is driven to the irritated part, but instead of rectifying, it increases the evil, & in ratio to the resistance, are the heart's contractions redoubled. The arteries being now universally affected, together with still greater activity in one or more organs, presents a case of Fever, with topical Inflammation.—

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If the inflammation locates itself upon a secreting organ, it may spontaneously be cured, by an augmented discharge of its peculiar fluid, & our care in the treatment, is to encourage this tendency. Should the lungs be the seat, expectoration must be promoted: if the liver or bowels, we depend on cathartics & diuretics: if the skin on sudorifics.

But if the inflammation selects an organ, whose excretions when accumulated, are incompatible with its regular functions, instead of lessening, the danger is enhanced by the discharge. We must counteract nature, by subverting her in the work of destruction, which is done by abstraction. The blood which has been called the pabulum vitae, in this case I may say with equal propriety, is the pabulum mortis. Unless the mass of the humours are reduced in quantity, the greatest danger may justly be apprehended. When depletion is successfully practiced, we bring about resolution, a term never used in

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physic, but I think is here not altogether inapplicable. Many times depletion can not, nor ought not, to be employed. In these examples we wish to translate the disorder to another part, & endeavour to draw it to the one most disposed. When this end is attained by remedies, it may be called, artificial crisis, & this in my opinion is the genuine modus operandi of blisters when used in fevers.

By a crisis I understand the abstraction of an excitement, that is generally spread over the system, upon a particular part. In a fever equal to 100, each part of the body will sustain an action, as it is a fractional part of the whole, but by a natural or artificial tendency, it is fixed upon an individual organ for example, the cellular membrane; the concentration of this diffused disease, will produce an inflammation sufficiently high, to run through all its stages — constituting critical abscess.

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-flammation distinctly, yet I consider them as differing only in degree, the former scattered over the whole system, the latter a collection & augmentation of the same affection, upon a particular part or parts. These two actions intrinsically the same, are generally considered as dissimilar. Their difference constitutes the ground-work of the division of the healing art, into Physic & Surgery. But human policy or refinement has drawn a line, which nature does not recognise.

Dr Gibson gives the following definition of inflammation "unusual redness, heat, swelling & pain" Now it is well known, these are the marks of simple fever, where inflammation is not suspected, as in the paroxysm of intermittent fever.

In inflammation two stages are very visible, those of languor & activity. The same thing obtains with respect to fevers.

Inflammation according to the same Professor, terminates in resolution, adhesion, effusion, suppuration,

ulceration, granulation, cicatrization, & mortification. That the first is a common, & much desired termination of fever, is familiar to all. Most of our cures depend upon this principle, & the means to effect our object, are the same in both provinces. By depletion, low diet, cold applications &c.

Severe excitement may & undoubtedly does often terminate in adhesion. I do not know that dissections have ever been made with this express view. Bichat discovered among the ultimate fibres of muscles & parenchyma of organs a condition similar to this. But allowing that adhesion, as a consequence of general action, could not be demonstrated with the knife, still its existence may reasonably be infered: especially when it is known, that different organs are often found, to be agglutinated after death.

Effusion is the most natural & legimate sequel of fever. It constitutes the critical discharges of the school: they are very important to the physician &

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require his greatest care & study. In acute diseases or new epidemics, these spontaneous tendencies are many times our safest & only beacons, & when carefully followed & skilfully managed, lead to the happiest results. Dropsy when general is this effect of pyrexia.

Suppuration, Ulceration, granulation & cicatrization as general products of fever, have perhaps never been witnessed. Small pox approaches nearly to it. But it may be said that each pustule is an independant phlegmon, & therefore that the suppuration &c in this disease, are still the peculiar fruits of inflammation. This objection has some weight. The reason why we do not observe these termenations, in cases purely febrile, is, that before the process could possibly be completed, the vital properties become extinct. In inflammation vitality is roused to the utmost extent; & when general or high, if not relieved, soon destroys itself. This happens in Small pox - the danger of

this disease, depends upon the number & extent of the eruptions. however numerous, ~~they~~ it generally proceed to the eleventh day, but the action at this time is so great & makes such potent demands upon life, that it can not be sustained, but ceases & gradually yields to the amount of the disease. This event most always happens upon the eleventh day, when the ulcerative & granulating process should commence. For inflammation topically situated, to go through its different stages, the part becomes disorganized & unfit to contribute its share, to the business of life. When circumscribed, the functions of digestion, assimilation and nutrition may be performed by the parts not implicated, & in this way the integrity of the system be preserved independently of the local derangement. But in acute & malignant fevers, when every part is deeply involved, vitality must eventually be annihilated. ~~under these~~ In these, the stages of ulceration &c are passed over & that of mortification

or what is precisely similar, the typhoid state is established. —— In mortification, "the heat sensibility & colour are lost" the tongue is dry & brown, delirium, subsultus tendinum & hiccuph frequently supervene. This holds good of fevers & the same language must be used to describe their stage of exhaustion or collapse.

It appears to me that inflammation & its effects are the principal & perhaps the only diseases of the body; for when it is general, we have the Pyrexiae & when local, the Phlegmasiae. Inflammation must vary according to its seat. Every tissue has a separate entality, & is endowed with powers suited to its purposes in the oeconomy, & when deranged, has symptoms of its own kind, responsive to the disorder; like the diversity in languages, the difference consists but in the expression, the principle remaining the same. In this way most nervous & local diseases may be explained. It must also be recollected, that many times the effect of inflammatory action is more

to be dreaded than the action itself. This consideration comprises all the Hæmorrhagiæ, Profluvia &c &c I might go on farther but must return.

If fever & inflammation are identified the most useful inferences may be drawn relating to their treatment. Our object should be to fulfil the indications of Medicine & Surgery. When our attempts fail to induce a favourable termination by resolution, effusion &c we should not allow the excitement to run too high, nor suffer the system to sink unnaturally low, but attempt to preserve a happy medium, whereby a mild and curable stage of exhaustion or gangrene is accomplished.

Shall now resume the consideration of my subject proper. The fever together with the local inflammation, continues sometimes for many days & then begins to abate. The pulse has lost much of its tenseness & smallness, it now becomes fuller & softer. In the infancy of the fever, if the radial or other artery was felt, the sensation was that of

emptyness or weakness: but after the abstraction of blood, or the exhibition of cathartics, the pulse acquired hardness, & as the decline approached, it was full & easy of compression. The hardness I explain by supposing, that when the heart is stimulated, or labours under irritation, its fibres and the coats of the arteries are contracted in their substance. But when the irritation is removed, or the excitement expended, the contraction of the heart & arteries is destroyed or exhausted, the fibres are flaccid in their texture, & yield to the distension of the blood. This accounts for the large soft & puffy pulse that occurs at this late period of the disease. Every part that was before constricted, now gives way: the high & forcible action has dissipated the vital powers; their resistance to the morbid cause is overcome. This relaxation or if I may be allowed the expression, the partial death of the parts, is not so great in this fever, as in those denominated putrid & pestilential. In the fever before me, we only observe oozings of serum from the skin, involuntary diarrhea; accumulations of mucus upon

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the bronchial passages: infiltrations in the cellular membrane, & ventricles or substance of the brain. — Petechiæ, discharges of blood from the different emunctories &c, so common in the old world, I have never seen. The nature of petechiæ, has never been understood. By Armstrong a late writer, they are attributed to some change in the blood. But if the analogy between this stage of fever & mortification, is as faithful as I suppose, then they correspond with the "vesicles of serum", so often mentioned as forerunners & concomitants of gangrene: & denote the death of the vessels from which they issue. The capillaries being the seat of the disease, lose their tonic power, become passive, & give way to the vis a tergo. In other words: the heart & large vessels being still in the possession of some energy, force the fluids through the unresisting extreme arteries & exhalents — & Petechiæ, discharges of blood & other matters are the consequence.

It is but seldom, that the physician is called upon, while this disease consists merely in irritation or engorgement. This state is generally neglected, the patient flattering himself, that his wandering pains & sense of coldness, will soon wear away. But sometimes the case is so imperious as immediately to demand assistance. A pale countenance, small pulse, & hard contracted skin, are many times sufficient warning of the difficulty to be encountered, & when this state continues for some time, a severe attack is denoted. Fortunately the Remedies that are now proper, are the same that are afterwards required. There may be instances, where the strength is directly diminished: in these stimulants are at once demanded. But these cases are rare. The remedy that first presents itself is blood-letting. After bleeding the system has an opportunity to recruit its forces, & a speedy reaction towards the surface is the effect. The local symptoms that now exist, are not inflammatory. They are in a condition, intermediate between that & irritation. Blood taken away at this time

is neither florid or covered with the buffy coat, though the patient may complain of excessive pain in the head, chest or abdomen. This inflammatory test, as it is considered, is wrought by the solids & does not occur until the arteries generally have become active.

Soon after this operation & many times antecedently to it, emetics should be given, as they are of signal service. The tartar emetic or Specacuanha may be used, where there is any or much action, the former should be chosen. After this it will be necessary to exhibit cathartics. The greatest advantage is derived from a combination of these means. 30 grs of Specacuanha & 12 grs of Calomel, given at once, will produce full vomiting & copious purging. These operations have the effect of removing the oppression, pain or sickness at the stomach; rousing the dormant system; equalizing its actions & driving the fluids to the surface & their appropriate channels.

In general the disease is now either obviously developed or entirely cured. Too often however, a hot skin, pain in

some organ & a full strong pulse, again loudly call for bleeding. It is repeated not only with safety, but with the most decided good effects.

Should the pulse still remain unequivocally hard, purging must again be resorted to. The most efficacious is Calomel. Its operation is as certain as that of any other cathartic, besides its specific effect may be of great help in the sequel. A pill of five grains is given every three hours, & if the evacuations are not sufficient, it may be assisted with Epsom salts.

The fever being perhaps alleviated, but still continues, the pain in the head, delirium, & morbid vigilance being yet present, the skin hot & dry, the pulse sometimes undoubtedly favourable to bleeding, but often very doubtful. If bleeding is judged admissible a portion suitable to the exigency of the case may be abstracted. Though I have practiced it with success, at this period it will not be necessary for me to urge the propriety of this measure in fever. It rather appears to me, there is more occasion for caution, than any farther

inducements. The medical Books abound with the strongest arguments in favour of the remedy, & the American Youth have freely imbibed their instructions. But while we use let us not abuse: it must be recollected that the most favourite authors of the present time, as Sydenham, Rush, Armstrong &c. in enforcing their doctrines of depletion, were very enthusiastic on account of the peculiarities of the times or some private relations. The former was combatting the rise & reign of chemistry, when bloodletting was brought into disrepute; & required the strong arm of a Sydenham to reclaim it from discredit. The greatest allowance should be made for the enthusiasm of Rush, when we are told by him, that in the yellow fever of '93 he cured nearly all, when this remedy was employed. This can not strictly be true: for the great ravages of that fatal epidemic, are too well known to admit this assertion. He was contending with popular prejudices & powerful rivals. & for his writings to acquire their desired influence, he was obliged to adorn his doctrines

with the powers of eloquence & beauties of persuasion.

For these reasons when the case becomes in the least ambiguous, we must pause & weigh. This is the most arduous task in the whole round of professional duties. At this juncture the most urgent call is made upon talents & judgment. The loss of a few ounces of blood is perhaps fatal, or its retention when indicated, is equally so. When upon mature reflection, it is deemed necessary, it should be drawn from the part most affected, which is at this time generally the brain. It can most conveniently be done by cupping. Even in the beginning, if the head is much deranged, general bleedings from this part should be made.

If the disease does not submit to this treatment, it becomes highly alarming. We have now in train endeavoured to cure it by resolution.

The cerebral symptoms now attain an ascendancy above the rest, & there is reason to believe, that every case that endures, after these decisive steps, depends

upon congestion of that viscus & is for the most part incurable. The scalph should be shaved, & a large blister sprinkled with tartar emetic should be applied to it. This will produce suppuration & contribute to the chance of recovery.

The tendencies of nature should carefully be watched. Many centuries ago, this was an important item in conducting the cure of acute diseases, & nothing is better founded: Sometimes it is best to rely upon cathartics: with the view of directing the disease to the bowels. In general we have more to hope from the skin, & remission is most always observable in the morning & sometimes a slight degree of coldness is present: but soon after the fever again sets in. Two or three hours after its accession, we should administer mild diaphoretics, such as warm teas. & combinations of antimonial wine & sweet spirits of nitre, These often have the power of inducing perspiration: the greatest assiduity is now required to continue it & diffuse it

The effect of perspiration is an abatement of the febrile phenomena, sometimes amounting to a perfect apyrexia. We must now be prompt to give tonics with the purpose of preventing a recurrence. The Sulphat of Quinine & decoction of bark must be given in large doses; to lose no time they may be exhibited during the flow of sweat, instead of interfering with, they promote perspiration. By interposing a few grains of the first medicine; the diseased chain is broken up & convalescence is at hand. Slight pain must not intimidate us, nothing short of a hard pulse & certain inflammation, can contra-indicate it. These remarks I consider as very important. This is the golden opportunity to save our patient & if the cure is not laid in this intermission, the fever resumes its course & will eventually destroy him.

Should this however be neglected, unavailing, or this timid tendency not take place, we must resort to other means. Of these Blisters are the most powerful

& salutary if seasonally employed, When too soon, they injure by their stimulation, & when too late of no avail. But at the time when evacuants are laid aside, the most powerful impression may be made by their application, This added to their principle of counter-irritation, often allows ~~always~~ the energies of the system to rally & the natural healthy movements to come into play. They ought to be placed directly over the inflammed organ, the back part of the head & neck & upon the extremities, When applied near the head they not only quiet the intellectual commotions, but also prove eminently soporific.

Hitherto I have said nothing of cold applications. Their pleasing effects are so familiar to all, as to require no encomium from me. As soon as the febrile action is established, their use is to be commenced & as long as the heat & dryness of the skin remains preternatural, must be persevered in. In allaying local pain, they deserve a high place

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in our estimation. A cloth dipped in cold water & placed upon the back, frequently relieves the pain of that part. I have known a furious delirium quickly give place to a state of quietude & sleep by the frequent affusion of the head & face with cold water. It is only when the temperature is below the natural standard that we desist in their use.

Sinapisms to the ankles & wrists are in common use among the vulgar and are often sanctioned by well taught Physicians. When the fever is very high, they must be pernicious, for unlike blisters they have no discharge to counteract their excitement. However when the action is somewhat reduced, they may assist in cutting it short, by deriving it to the part of their application: but if the system is overcharged with fever, they tend rather to increase than lessen violence. They are made of mustard alone or mixed with rye-meal & vinegar: or of horse-radish leaves properly prepared. If laid on the arms, it should be above the part where the pulse is felt.

The greatest attention should be paid to the diet: it is very common for the friends to urge the patient to partake of improper food, fondly persuading him that it will contribute to his cure. But nothing can be more pernicious than to annoy the stomach in this way. In fact provident nature guards against this by loathing & entirely rejecting it. Abstinence from stimulating food is a valuable auxilliary in the management of this fever.— The thirst is sometimes very considerable & we are often solicited to allow cold water: in complying with this request I have never had cause for repentance: except when the stomach was much deranged. I believe cold water in small quantities not only allays thirst, but is highly febrifuge. There exists however, a great prejudice against it among the old women: which makes it necessary sometimes to devise other beverages. Balm-tea, common tea, toast water, lemonade &c. &c. may be substituted & when sweating is desired, they may be drank hot. The windows & doors should be opened & a free circulation of air admitted. The patient's head

should be propped up by pillows, above the level of his body. This may seem unimportant, but is certainly of advantage. Surgery has availed itself of position & should not be overlooked by the physician. In fine during this stage of activity, the antiphlogistic regimen in all its particulars should be pursued.

To our disapointment, the disease often waxes stronger in its course, unless it is arrested at this time by a salivation which now arises, if calomel was used in the beginning. If this takes place recoveries generally ensue. In Children this effect can not be accomplished, and our prospects at this time are less favourable. When ptyalism does not supervene or is of no avail. A change in the character of the symptoms must soon take place. This is the time that tries our souls" I speak of us, who are juniors in the profession, without experience to make us familiar with such scenes, or skill to interrupt the march to dissolution.

Nothing can be more easy for an Author, than

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to point out two divisions in this fever: to draw limits on paper is an easy matter, but to see the distinction at the bed-side of the sick - to follow nature in all her secret meanderings is to me, often difficult & sometimes impossible. In my limited intercourse with the sick, nothing is so embarrassing, as to ascertain the precise time, when the stage of excitement merges into that of exhaustion. Our teachers men of experience & talents would in my opinion better fulfil their objects by dwelling longer upon this point. If we delay the use of cordials & stimulants a few hours after the system languishes, they are too late to be of service: if we, on the other hand administer any of this class of medicines prematurely, they irrit & confirm the disease. - When there is a weak & tremulous pulse, an exudation of serum upon the face & other parts, cadaverous countenance, stertorous breathing, spasms of the tendons, hiccup, diarrhea, indistinct voice, contracted or dilated pupils, low delirium or insensibility, all prospects for recovery are blighted. It is therefore our duty to be vigilant in the first part of the sickness & endeavour to

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lay the case before these mortal symptoms supervene. When our doubts are dispelled, the greatest promptitude is requisite. The indication is now to support the strength. With this view highly seasoned chicken broth must be freely used. The Sulphat of Quinine in doses of 3 or 4 grains every hour, must be tried. If there is much mental disturbance, some discretion must be exercised in the selection of stimulants. Wine & brandy are known to excite the brain & therefore should not be employed: but if the head is clear from the commencement, these liquors diluted, or wine-whey may be exhibited largely. Volatile-Alkali is a most powerful & equable stimulus increasing the force of the heart & giving tone to all the animal actions, must by all means be tried.

External irritation must be kept up by blistering & sinapisms. All evacuations must be discontinued particularly cathartics. Cold applications must also be entirely abandoned. The patients body may be rubbed with spiced brandy & Spt.s of Turpentine.

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These means have rescued patients from imminent death When the stage of exhaustion is present in all its fulness, there is little hope of recovery. The violence of the disease in its incipient state having been unsubdued, so much disorganization is probably committed that the healthy action of the parts can not be restored. That physician, who has penetration & discernment to interpret the nature of the case in the beginning; who possesses judgment & energy to control it, neither exhausting the patients resources unnecessarily, nor suffering the disease to acquire the ascendancy, will be the most successful in his practice & worthy of being enrolled among Public Benefactors.